

Studi kasus desain upgrading sistem impressed current cathodic protection untuk bagian dasar tanki t 1301 a b c d dan ab rerun tank di PT XX Kalimantan Timur sebagai metode pengendalian korosi eksternal = Case study of upgrading design for impressed current cathodic protection for bottom tank t 1301 a b c d and ab rerun tank at PT XX East Borneo as external corrosion control metode

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Abstrak

Penentuan desain sistem Impressed Current Cathodic Protection di bagian dasar tanki T-1301 A/B/C/D dan AB Rerun Tank di PT XX Kalimantan Timur yang meliputi proses perhitungan kebutuhan arus dan jumlah tegangan DC keseluruhan sistem struktur serta pengaruh penambahan struktur lain yang meliputi electrical grounding system telah berhasil dilakukan dan secara efektif telah dikontrol di lapangan. Selain proses desain engineering, variasi lapisan tahanan tanah terhadap ketidakseimbangan IR Drop pada sistem Impressed Current Cathodic Protection di bagian dasar tanki T-1301 A/B/C/D dan AB Rerun Tank di PT XX Kalimantan Timur dan pengaruhnya terhadap distribusi potensial telah dipelajari.

Dari hasil pembuktian di lapangan menunjukkan bahwa dibutuhkan 10 anoda tambahan dengan total kebutuhan arus DC 154 Ampere dan kebutuhan tegangan DC 32 Volt , selain itu tahanan tanah yang tinggi diatas 3000 ohm cm akan menyebabkan pembacaan error yang tinggi. pH tanah yang rendah berkisar 5-7 akan mengurangi tahanan tanah, dan meningkatkan distribusi arus proteksi katodik.

<hr><i>Engineering design calculation for bottom section of T-1301 A/B/C/D dan AB Rerun Tank at PT XX Santan Terminal including current requirement and DC voltage calculation followed by additional structure such electrical grounding system has been already successfully implemented and controlled at field. Furthermore, effect of soil layer resistivity and pH of soil against disproportion of IR Drop voltage including its effect to potential distribution has been already successfully observed. Another influences such depth and location of anode groundbed determination along with establishment of impressed current cathodic protection main tools and equipments as external corrosion control method has been defined as the most effective way for controlling potential distribution against structure.

As per verification results from site, the results showed that the cathodic protection required 10 additional anode (MMO), with minimum amperage DC supply is 154 A, minimum voltage supplied is 32 Volt, it has been identified that high soil resistivity above 3000 ohm.cm would cause error reading. Naturally, acid soil in about pH 5-7, would decrease soil resistivity and enhanced potential distribution from anode to tank structure.</i>